RENEW WISCONSIN
The organized voice for renewable energy since 1991
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Re: Strategic Energy Assessment for the Years January 1, 2016, through December 31, 2022
Docket No. 5-ES-108

RENEW Wisconsin appreciates the opportunity to provide comments on Strategic Energy Assessment 2022 (SEA).

It's clear from looking at national data sources and the information we collect and compile here in Wisconsin that renewable energy development accelerated rapidly in 2015 and will achieve an even higher growth trajectory in 2016 and 2017. This is not simply a national phenomenon; Wisconsin is participating in this resource shift as well. The conclusions we draw from this are unambiguous; wind and solar are cost-effective options today both for utilities and individual customers. Here are a few examples:

- Dairyland Power Cooperative announced that it will purchase the output of a 98 MW wind power project to be constructed in Lafayette County. The Quilt Block project will be operational before the end of 2017.
- Dairyland Power Cooperative entered into power purchase agreements with two developers which together will construct 15.5 MW of solar generation over the next 12 months.
- A 2.25 MW solar project owned by Hanwha Q CELLS and located in Rock County is now operational and selling power to Alliant Energy. For the moment, it is the largest solar generation plant in Wisconsin.
- Xcel Energy is moving forward on a community solar program that will supply clean energy to subscribers from 2 MW of solar by the end of 2016.
- Installed last year, a 740 kilowatt solar array is now producing power for a Madison-based refrigerated warehouse. It is the largest rooftop array in Wisconsin.

There is no mention of this trend in the SEA 2022. Perhaps this is due to the timing of this assessment, which contains data only through September 2015. To avoid such a conspicuous information gap in future assessments, we would recommend that

Commission staff look to other sources besides the utilities to get a more complete picture of renewable energy development in Wisconsin and nationally.

Distributed Resources

RENEW notes that this is the first SEA that systematically collects and analyzes information on the state's distributed energy sources. We believe that this new section strengthens the assessment, as more customers, especially in the commercial and industrial classes, take steps to hold the line on their energy costs through the installation of on-site renewables. Understanding that this is the inaugural appearance of this section, we would like to take this opportunity to offer suggestions for enhancing the usefulness of this section.

Suggestions for improving the usefulness of the Distributed Energy Resources (DER) section in future editions of the Strategic Energy Assessment.

Create two broad categories for solar: Category 1, consisting of utility-owned solar/direct sales to utility (e.g., MGE 500 kW shared solar project, Jefferson Solar 1 MW project (WPPI), Hanwha Q Cells 2.25 MW project (Alliant)); and Category 2, consisting of behind-the-meter customer-sited solar. For data gathering purposes, electric providers will be a reliable source for output totals from Category 1 installations. Most of the Category 1 PV capacity coming on line in 2016 and after will have single-axis tracking capabilities which will enable the panels to generate more electricity per panel. Of the 25 MW of solar generation that we anticipate will be completed in 2016, 16 MW, or 64% of that total, will be placed on single-axis tracking systems.

For Category 2 installations, we believe it would be better to estimate output data based on total PV generating capacity interconnected to electric providers multiplied by an estimated production number. We would propose 1,200 kWh per kW per annum as a reasonable estimate of production for Category 2 installations.

This methodology will enable the Commission to capture the quantity of kWh offset as well as the quantity of kWh exported to utility systems. Most net metered PV systems are connected to the grid via bidirectional meters, which yield less than complete information regarding generation that is consumed on-site. This results in production numbers that can severely underrepresent the systems' true performance. Table 6 reports that the 21.15 MW of solar generation in place in 2015 produced a total of 10,558 MWH, resulting in a capacity factor of 5.6%. Using our methodology results in a total of 25,380 MWH generated. That's quite a difference.

Table A-6

We would like this opportunity to provide another analytic layer to the information presented in Table A-6. There may be a tendency to assume that the solar systems

represented in Table A-6 are net metered. In fact there are two significant groups of customer-hosted solar generators that are not net metered. The first group consists of customers who supply electricity to green pricing programs through their utility's Advanced Renewable Tariff. This is a significant subset of solar-owning customer generators, perhaps as many as 500 in total. There are nearly three MW of customer-owned solar capacity supplying We Energies' Energy for Tomorrow program, Madison Gas & Electric's Green Power Tomorrow program, and Alliant's Second Nature program. Depending on the utility, these customers receive between 22.5 cents/kWh and 25 cents/kWh for the electricity that flows directly into the grid. We estimate that these customer-generators received more than $700,000 in compensation in 2014 for the electricity they produced.

The second group consists of larger commercial customers whose PV systems exceed the net metering threshold. This diverse group of customers now includes, among others, Central Storage and Warehouse, Potawatomi Casino, Sisters of St. Agnes and Darlington School District. Those four customers alone have more than 1.5 MW of solar capacity between them. As commercial customers, the energy rates paid by these customers are less than those paid by residential customers. In those relatively few instances where their generation exceeds consumption, the economic return on the electricity they export is reduced by 50% or more. However, the vast majority of the solar production at these facilities is simply consumed on-site in real time. However, more favorable net metering policy could substantially drive the market for distributed renewables going forward.

Conclusion

In conclusion, we once again thank the Commission for the opportunity to provide comments on this document.

Sincerely,

Michael Vickerman
Program and Policy Director
July 8, 2016